CLAIMS

1. A nanoparticle, which particle encapsulates a fluorescent material.

2. A nanoparticle according to claim 1 characterised in that the nanoparticle is derived from a sol gel.

3. A nanoparticle according to claim 1 characterised in that the nanoparticle is intrinsically fluorescent.

4. A nanoparticle according to claim 1 characterised in that the nanoparticle entraps a protein conjugate of a reporter molecule.

5. A nanoparticle according to claim 3 characterised in that the reporter molecule is covalently attached to a macromolecule.

6. A nanoparticle according to claim 3 characterised in that the nanoparticle is derived from cadmium sulphide and cadmium selenide optionally doped with rare earth atoms.

7. A nanoparticle according to claim 6 characterised in that the rare earth atom is a europium III salt.

8. A nanoparticle according to claim 1 characterised in that the nanoparticle is substantially spherical and has a diameter of from 30 to 500 nm.

9. A nanoparticle according to claim 1 characterised in that the nanoparticle comprises a fluorescent dye based on entrapment of a protein-dye conjugate or a DNA-dye conjugate within the nanoparticle.

10. A nanoparticle according to claim 9 characterised in that the dye is selected from Texas Red-labelled gelatin, porcine thyroglobulin, and fluorescein-labelled bovine serum albumin or gelatin.

11. A nanoparticle according to claim 1 characterised in that the surfaces of the particles are modified to enable them to be provided with a surface coating.

12. A nanoparticle according to claim 11 characterised in that the particles are capable of being modified by passive adsorption or via covalent attachment to coat their surfaces with hydrophobic molecules.

13. A nanoparticle according to claim 12 characterised in that the hydrophobic molecules are selected from phosphatidylcholine and phosphatidylethanolamine.

14. A nanoparticle according to claim 2 characterised in that the Sol gel-derived nanoparticles comprise a Texas Red-porcine thyroglobulin conjugate embedded within them.

15. A nanoparticle according to claim 1 characterised in that the particles comprise a high fluorescence intensity.

16. A nanoparticle according to claim 1 characterised in that the surface coating is lipophilic.

17. A nanoparticle according to claim 1 characterised in that the particle is adapted to bind to a sebum-derived component.

18. A nanoparticle according to claim 17 characterised in that the sebum derived component is selected from the group comprising waxes, cholesterol and squalene.

19. A nanoparticle according to claim 16 characterised in that the lipophilic coating is selected from phosphatidylcholine and phosphatidylethanolamine.

20. A nanoparticle according to claim 11 characterised in that the coating is passively adsorbed directly onto a sol gel particle.

21. A nanoparticle according to claim 1 characterised in that the particles are formed from TEMOS (tetramethyloxysilane).

22. A nanoparticle according to claim 21 characterised in that the particles comprise aminopropyloxysilane-derived sol gels.

23. A nanoparticle according to claim 22 characterised in that the preparation of the particles included a glutaraldehyde treatment.

24. A nanoparticle according to claim 23 characterised in that the glutaraldehyde treatment was followed by cyanoborohydride reduction.

25. A nanoparticle according to claim 24 characterised in that the cyanoborohydride reduction was followed by an ethanolamine wash.

26. A nanoparticle according to claim 1 characterised in that the particles are uncoated nanoparticles and carry either a net negative or a net positive charge.

27. A nanoparticle according to claim 1 characterised in that the particles are provided with a hydrophilic coating.

28. A nanoparticle according to claim 27 characterised in that the coating carries either a net negative or a net positive charge.

29. A nanoparticle according to claim 27 characterised in that the hydrophilic coating comprises polylysine.

30. A method of detecting prints (e.g. fingerprints) which comprises the use of a nanoparticle according to claim 1.

31. A method according to claim 30 which comprises determining details of fingerprint substructures.

32. A method according to claim 1 characterised in that the scanning was performed at an excitation wavelength of 595 nm

33. A nanoparticle or a method substantially as described with reference to the accompanying examples.